Use of Internet in Health Care Research

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Introduction : The internet

- Greatest advancement in information processing since the invention of the printing press
- Use of the internet has become a necessity in health care- in fact a necessary part of our lives
- The computers have changed all things

Why do research?

- To add to knowledge
- To tell what we are doing
- To solve problems
- Course requirement
- Specialization/ promotion

Lecturers! “publish or perish”

Basic process of research

- Topic selection
- Literature search / review
- Method /materials/fund
- Data collection
- Data analysis
- Discussion of results
- Dissemination information

Traditional way of researching:

Topic selection

Source of topic or idea

I. Thrust upon us
II. Nagging problem
III. Academic readings
IV. Brainstorming

Problem

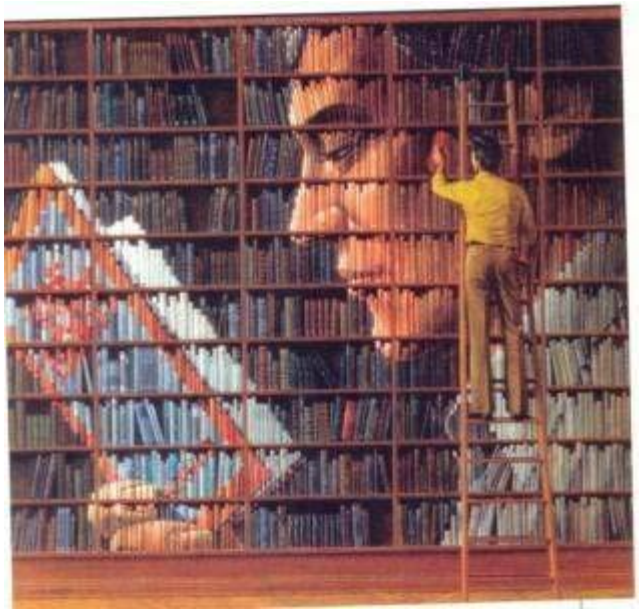
May be obsolete even as you conceive it- you are just in your small world

Traditional Literature search

Era of weeks/months of search

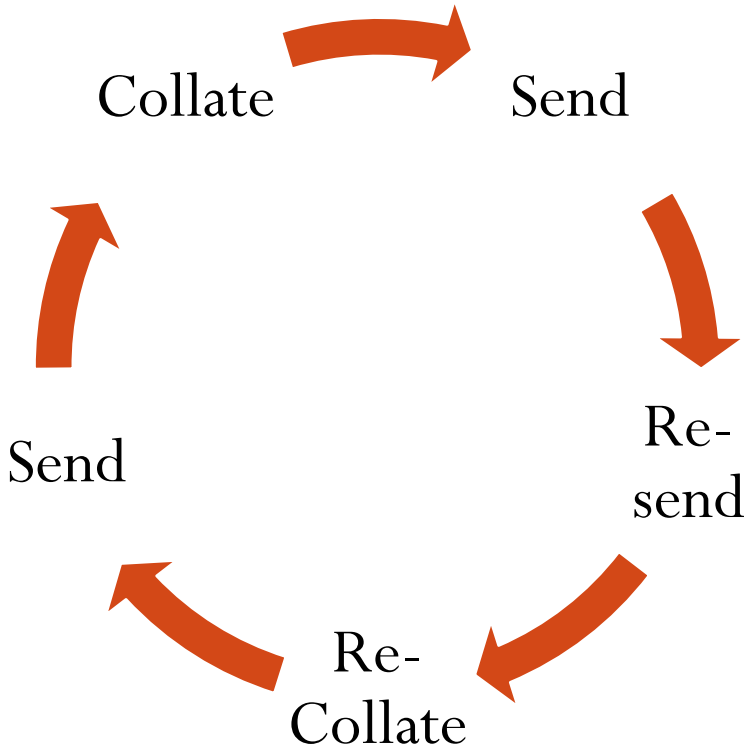
Problems

- Long hours
- How many libraries can I visit in a year?
- In what locations?
  –certainly not the world over
- Language barrier
- Paper-difficult to manage



What about group research?

- Collaboration is working together.



Back and forth……
…cumbersome

Tradition way of collaboration

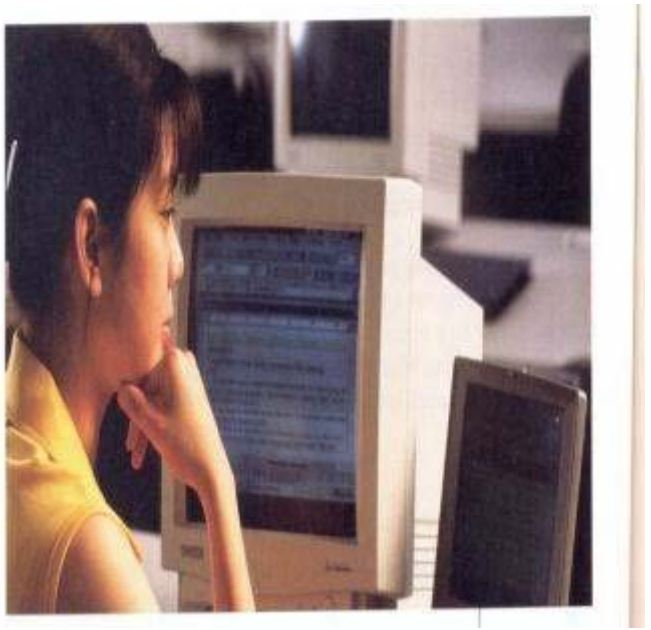
- Not easy to get full house
- Questionnaire based ?– need to track down subjects –days and weeks
- Copies of manuscript – more papers still
- DHL, NIPOST to ensure it gets there
- Correction- sending back and forth. Takes weeks and months

What about using the internet?

A. *The world is a village*

B. *I can go from A to Z on my laps*

C. *I just need to know how*



LET US SEE HOW!!!

I. You will need a plan

The internet will be useful from the beginning to the end of your research

Using the internet from start to finish

I. Choosing research topic.

II. If you have one you can refine it . Is it hot or cold?

III. Getting the literature-Anywhere, language not a barrier. Web based translators.

IV. Questionnaire based – just have a site, send mails to invite subjects, etc

Using the internet from start to finish

V. Process the data & store – Get the software or use the web

VI. Collaborate with the world, online conferencing, webinars - remember CRASH 1and 2

VII. Find appropriate journals and editors, proofreaders – Google it!

VIII. Send the manuscript - track the manuscript- review and resend and review over and over in minutes and hours, days. You are the determinant!

You will need the right tools

Basic requirement: connectivity, browsers

Computer: PCs, Tablets, Smartphones, etc

Connectivity: "everywhere you go" or " rule your world" , etc

A web browser : software for accessing internet , retrieve and present resources on the internet:

- *Internet Explorer*
- *Mozilla Firefox*
- *Chrome*
- *Opera*
- *Safari*

You will need a means of searching the internet

Search engines and electronic libraries

SEARCH ENGINES(navigates the internet to locate information)

RETRIEVAL SYSTEMS

DATABASES: Internet repositories of data

- Medline
- Cochrane lib
- OVID
- SCORPUS
- CINAHL

PubMed

HINARI ACCESS TO RESEARCH

AJOL AFRICAN JOURNALS ONLINE

Specialized Electronic Databases

- Although the topic area dictates the databases to be included, the following are common ones:
  - MEDLINE (General)
  - Cochrane Central (General)
  - EMBASE (General, more international in scope)
  - PsychLit/PsychINFO (Psychology)
  - AIDSLine (HIV/AIDS)
  - CINAHL (Nursing)
  - TOXNET (Adverse Events/Toxicology)

Generally a minimum requirement for a thorough search of literature

You will need tools to write

Some Online Word processors

Google docs

https://docs.google.com/?hl=en&tab=wo&authuser=0&pli=1#home

Microsoft Office 365

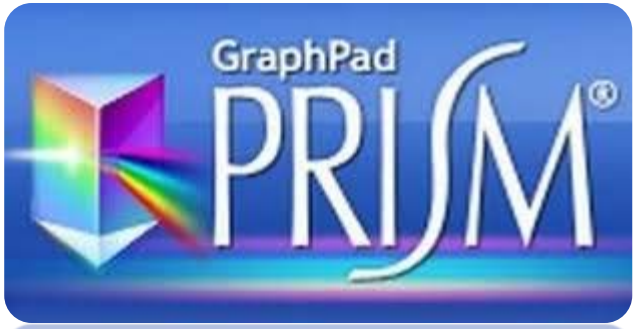
http://office.microsoft.com/en-us/web-apps/

You will need tools for data analysis

Online Statistics programs

- SISA

  http://www.quantitativeskills.com/sisa/



- Graph pad

  http://www.graphpad.com/quickcalcs/index.cfm

You need a place to store it all

Some online softwares and programs

- **DropBox**

  http://www.dropbox.com/

- **Sky Drive**

  https://skydrive.live.com/

- **Google Drive**

  *https://**drive.google**.com/*

- **Sugarsync**

  https://www.sugarsync.com/

- **And many, many, more**

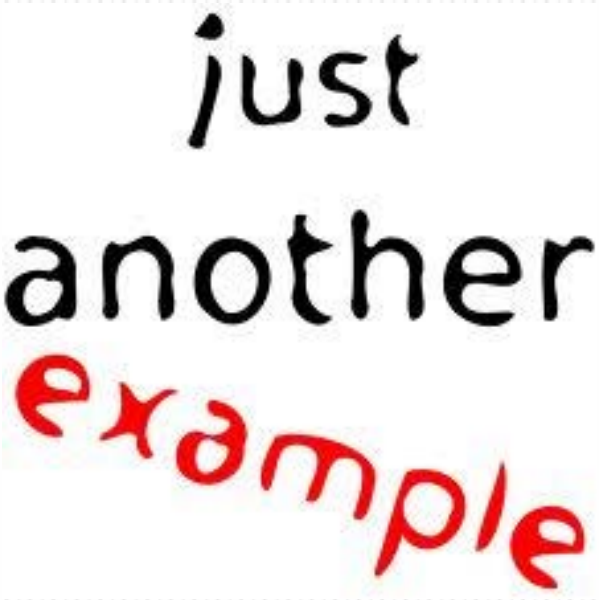
You need a tool to ease the pains of writing your reference

Online Reference Managers

- Zotero
  www.zotero.org
- EndNote Web
  www.endnote.com
- Mendeley
  www.mendeley.com

An Example:

Topic: Preoperative use of analgesic in acute abdomen



Searching Strategy I: What, Where & Who

- Define your information need
  - What sort of information are you looking for?
    - For general consumption?
    - Scientific?
  - What sources are appropriate?
    - Journal?
    - Encyclopaedia?
    - Dictionary?
    - Textbook?
    - Newspaper etc
  - Who is going to use the information?
    - Clinician
    - Researcher
    - Student
    - The lay public?

Searching Strategy I contd.

- For our Example
  - Our information need is scientific
  - Appropriate sources will be journals and sometimes textbooks
    - We will search healthcare databases. Use PubMed, CINAHL etc
  - Who is going to use the information?
    - This is mostly for clinicians, researchers, and sometimes, students.
      - The references must be reproducible

STRATEGY 2 : Choosing your search terms

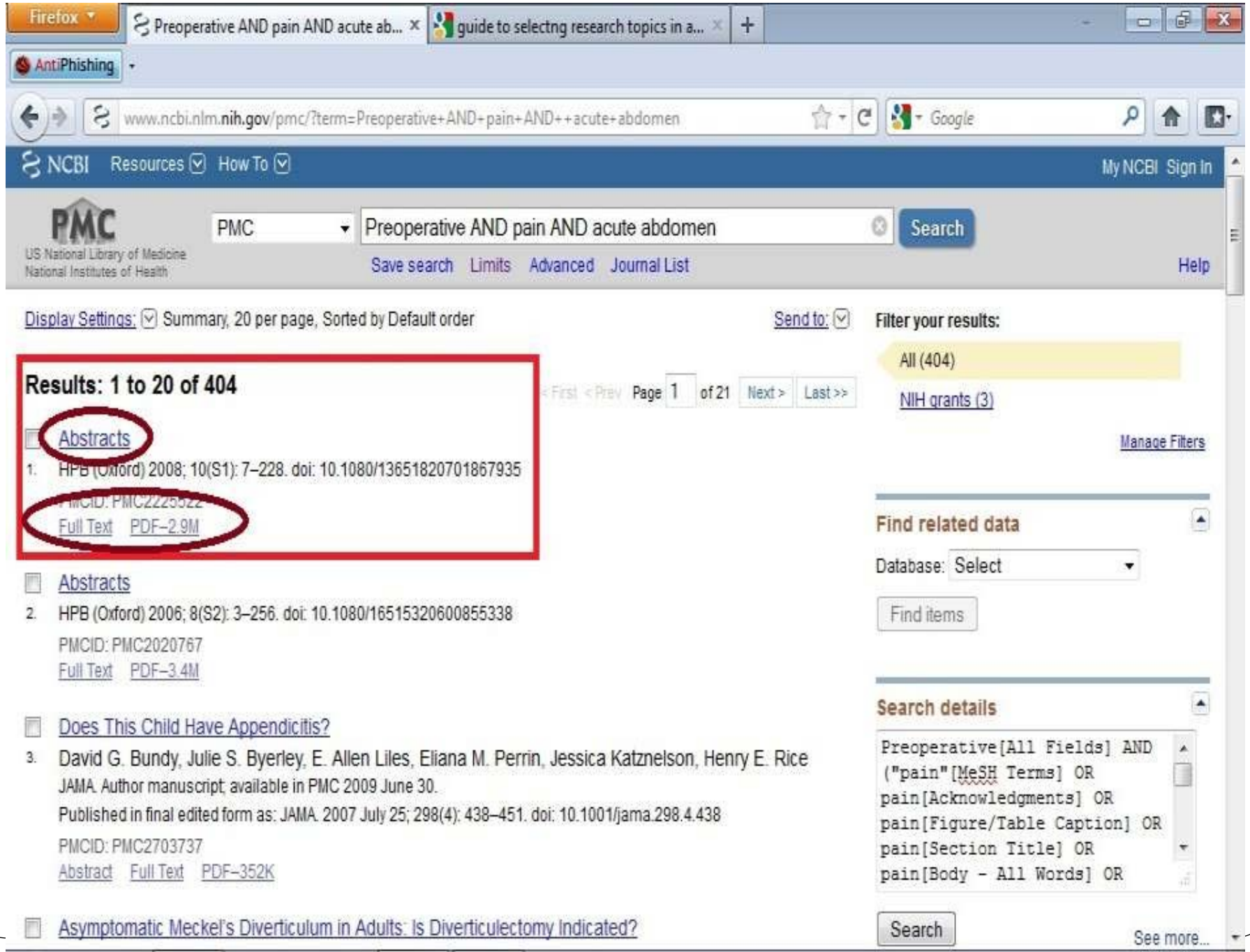
What are the key phrase /or unique words that might appear in a website or article?

PREOPERATIVE, ANALGESIC, ACUTE ABDOMEN

Are there synonyms, alternate spellings, plurals or capitals that should be considered?

PERIOPERATIVE, BEFORE OPERATION, ANALGESIA, PAIN RELIEF, SURGICAL ABDOMEN, ACUTE ABDOMEN.

Let's PubMed it!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Abstracts
1. HPB (Oxford) 2008; 10(S1): 7–228. doi: 10.1080/13651820701867935
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3. David G. Bundy, Julie S. Byerley, E. Allen Liles, Eliana M. Perrin, Jessica Katznelson, Henry E. Rice
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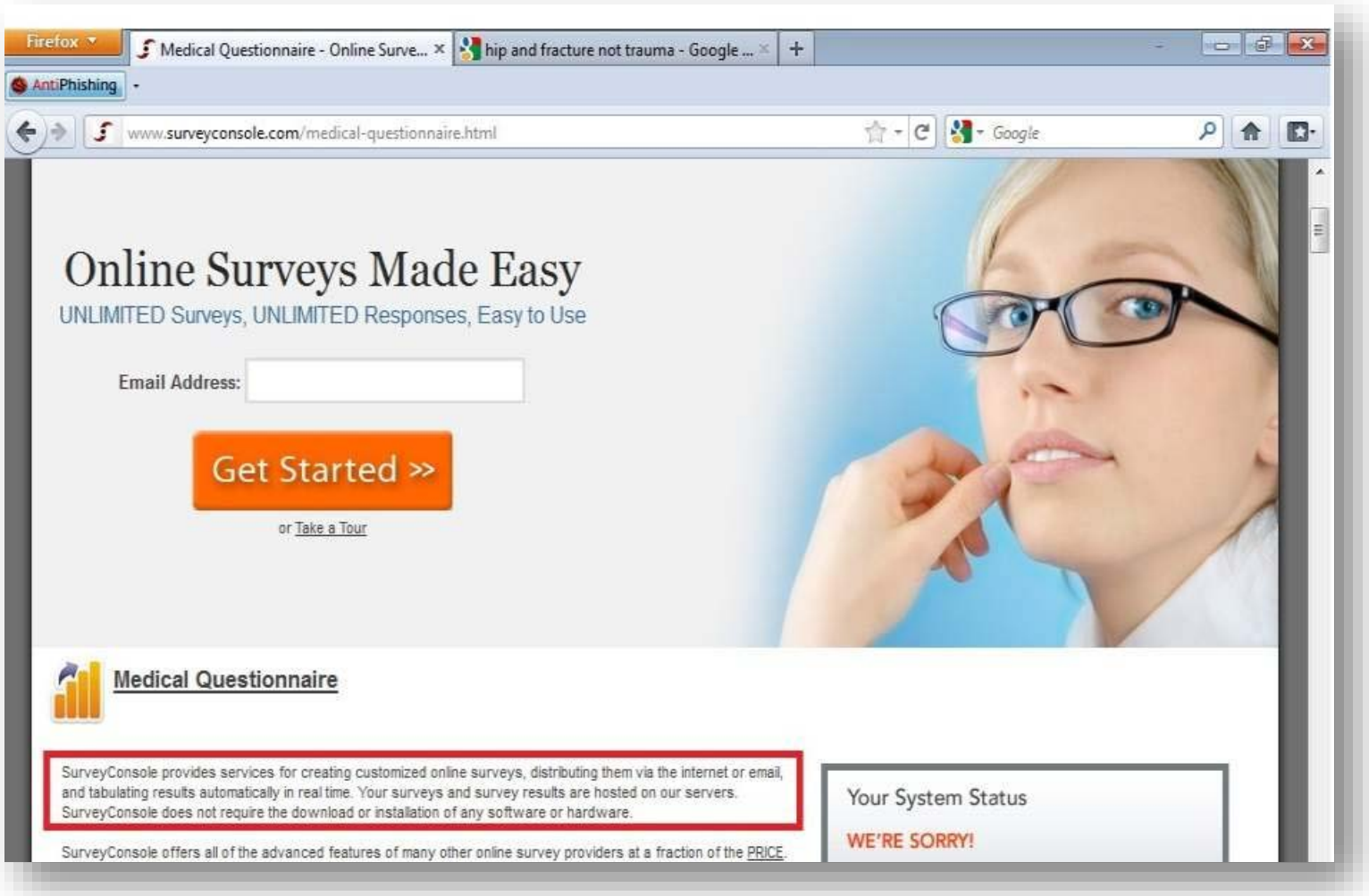
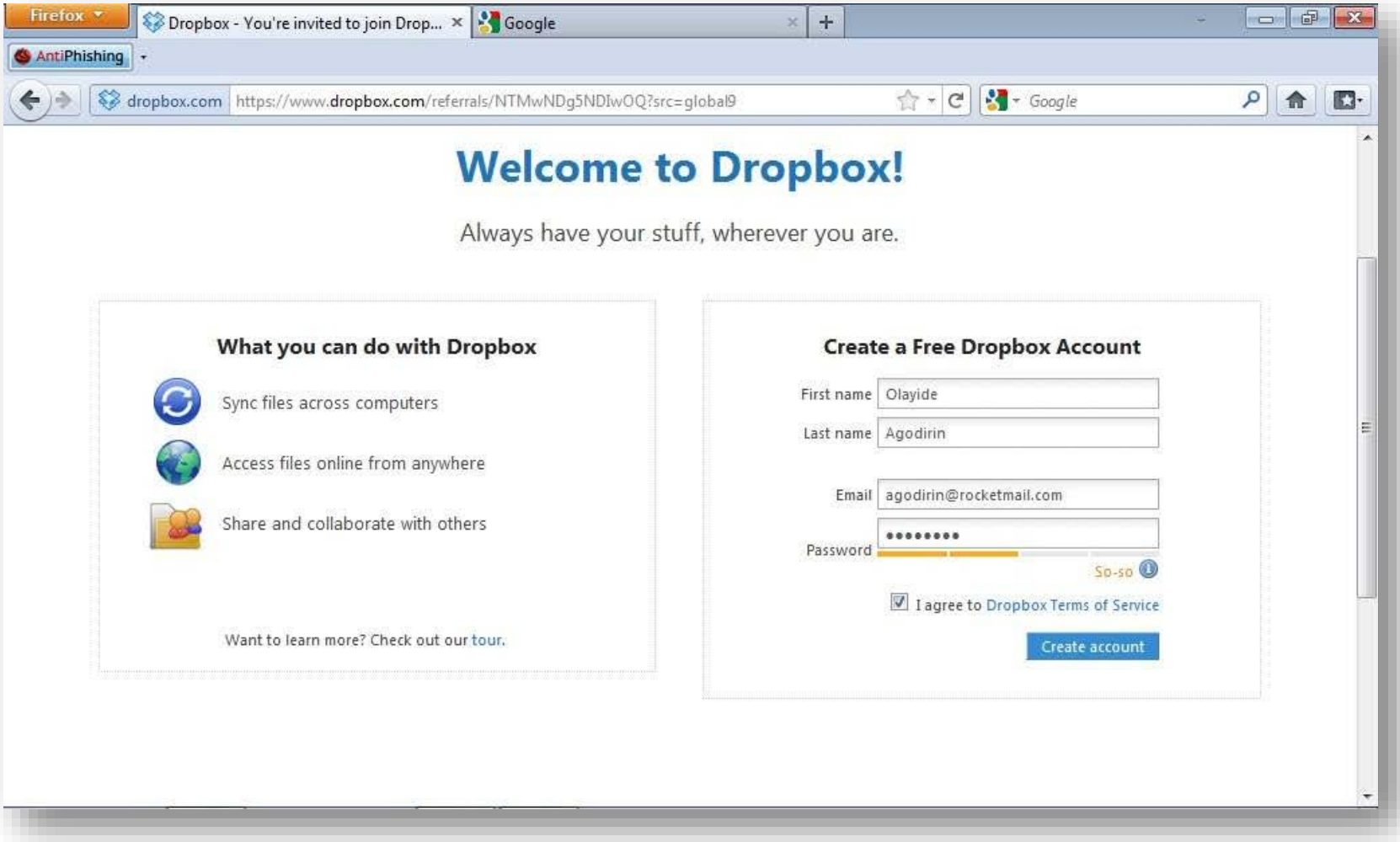
DATA COLLECTION: Online

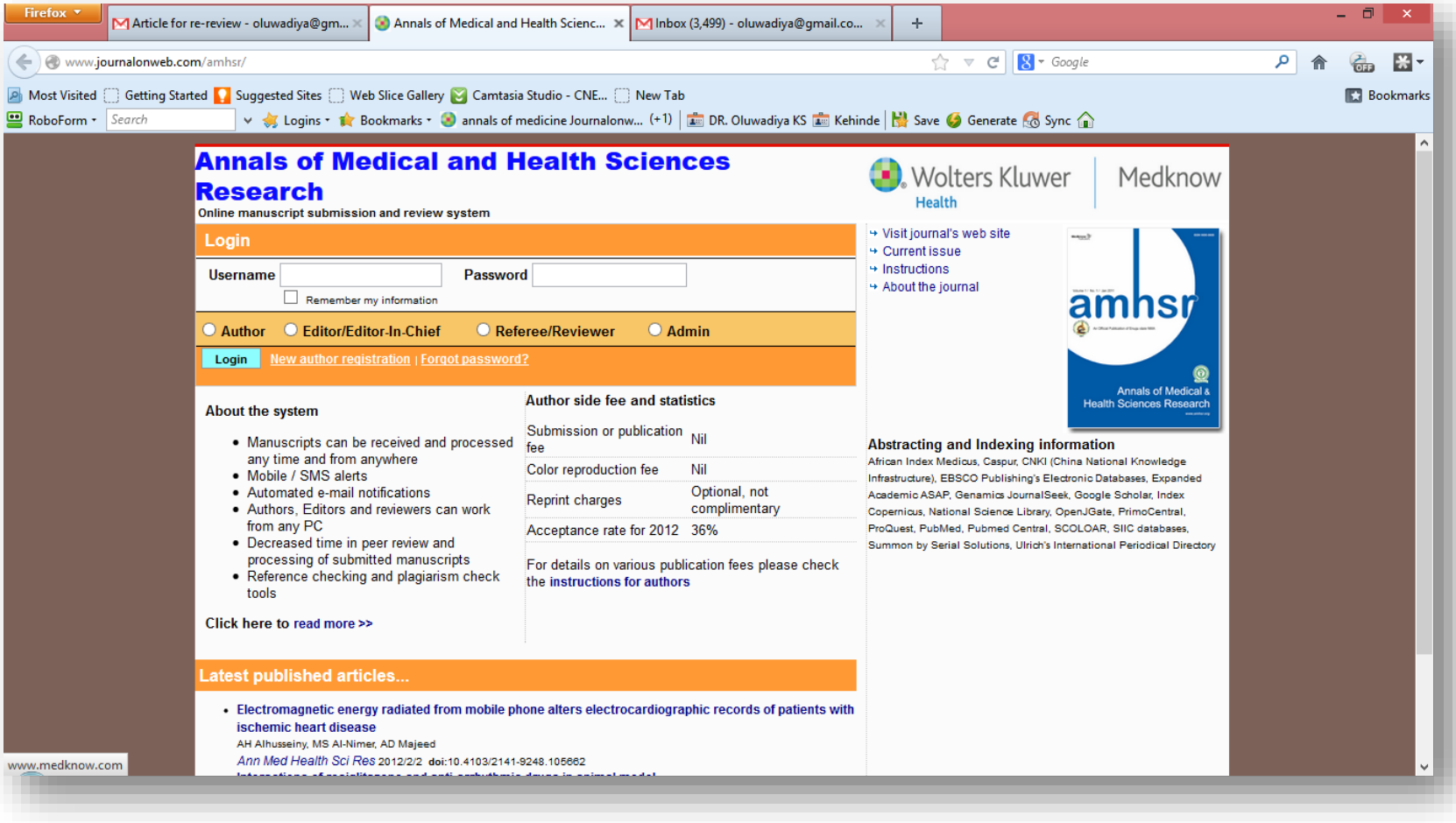


WRITING UP/ GROUP REVIEW: Online

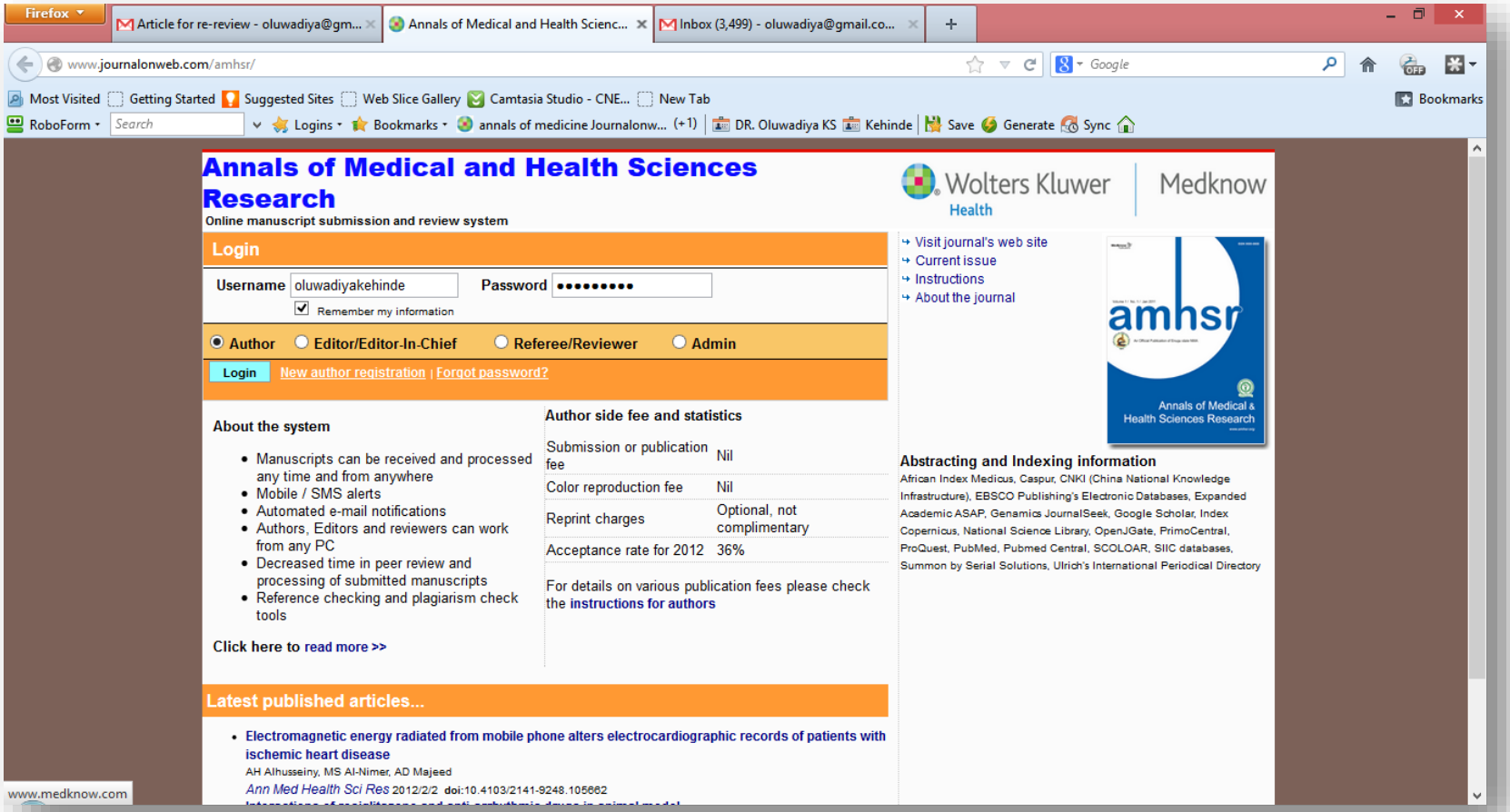
STORAGE : Online



CHOOSING YOUR JOURNAL: Online



SEND FOR PUBLICATION AND MONITOR: Online



WHEN YOU DO EVERYTHING ONLINE

- Cloud Computing: Using a network of remote servers hosted on the Internet to store, manage, and process data, rather than a local server or personal computer .

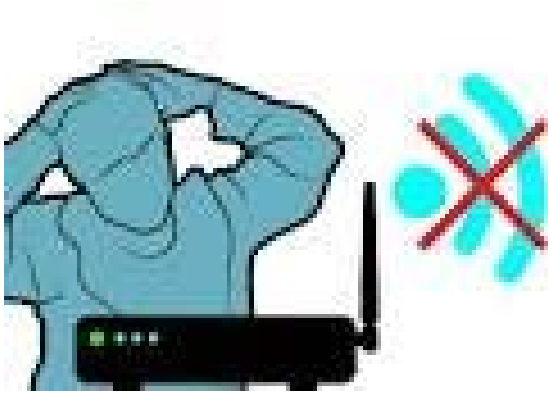
EVERY METHOD HAS ITS PROBLEMS

- Uncensored information- anybody can publish anything
- Information overload
- Questionnaire based- any body can pose, debriefing difficult
- Questionnaire based- DROPOUT rate higher and you won't know why!
- Expensive to remain online
- Plagiarism so much easier
- Not everything is online and not all are searched, it depends on the reaches of your search engine
- Malwares: Virus! Trojans!! Rootkits!!!:
- INTERNET ACCESS – OUR OWN NO 1 PROBLEM

DRAW BACK 1 - CONNECTIVITY

Our own problems are – "everywhere you go" , " rule your world" , " your worst connection to the world"

➔ beyond the common man/reasonable bandwidth expensive



Out there- it's expensive to organization to maintain libraries and networks, connectivity, IT staffs etc

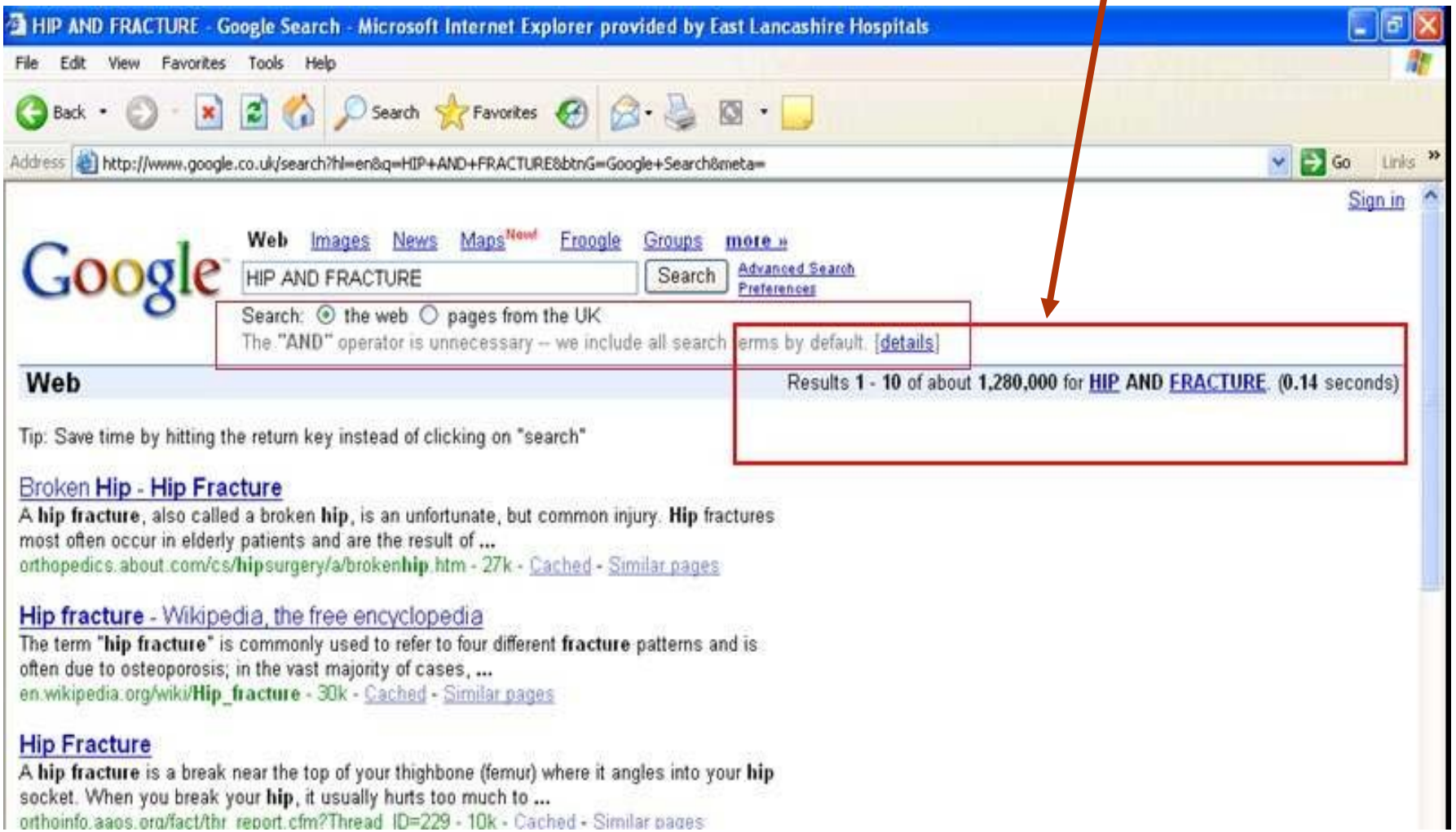
➔ competition will make it cheaper

DRAW BACK 2- INFORMATION OVERLOAD, managing your search

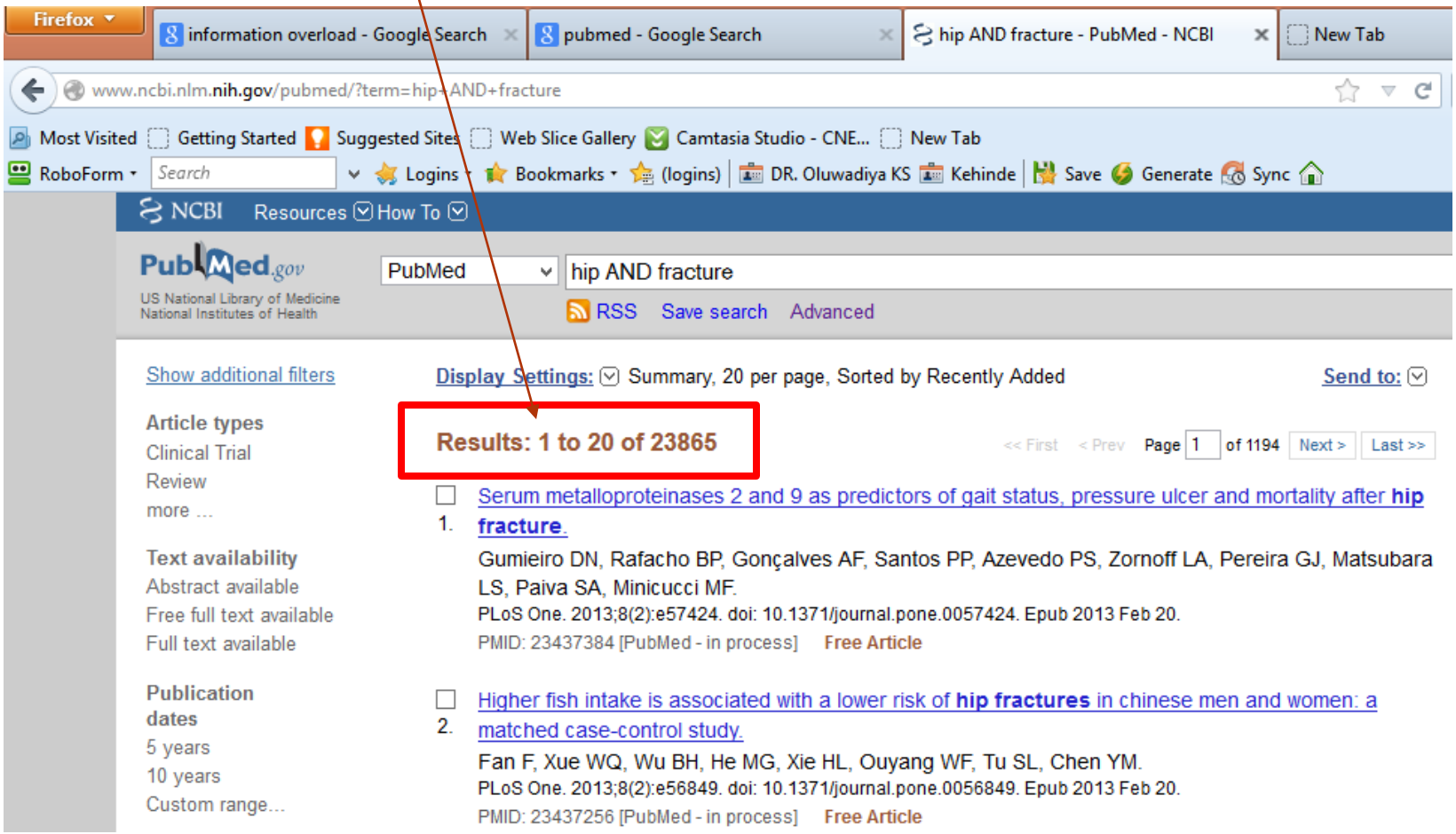
- Select website,
- Use filters/limits on search engines- age, sex, author, year, journal
- Specific key words
- Arrange in order of importance-the browser will follow you
- Boolean logic,
- Use quotation marks- for phrases
- You may need special search characters- truncators, wildcards etc

Example : hip fracture

Google….Browses the whole internet….Lots of hits

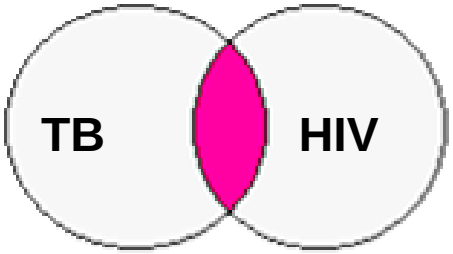


From PubMed....Browses medline...more focused results



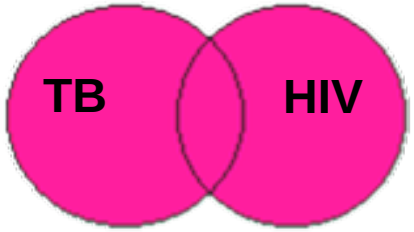
Boolean operators

AND



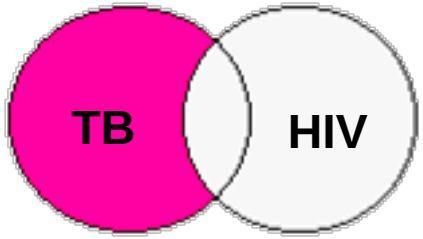
Tuberculosis **AND** HIV

OR



Tuberculosis **OR** HIV

NOT



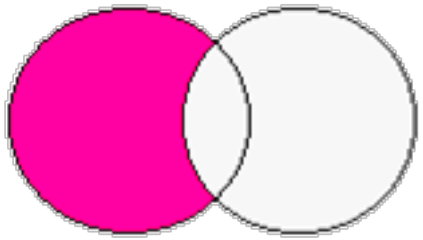
Tuberculosis **NOT** HIV

Boolean Operators: Caution

BE CAREFUL

"NOT"

can weed out good resources

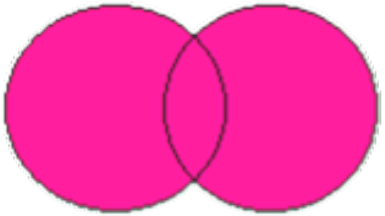


Boolean Operators: Caution

DON'T GRAB IT ALL

"OR"

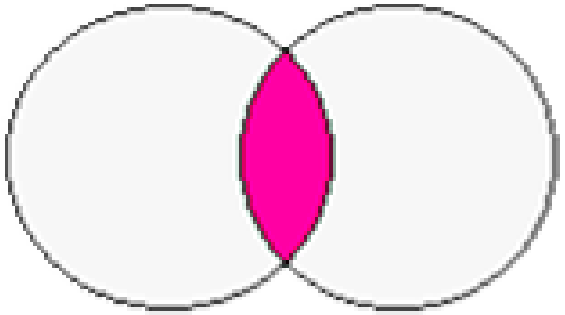
CAN BRING UP LOTS OF JUNKS



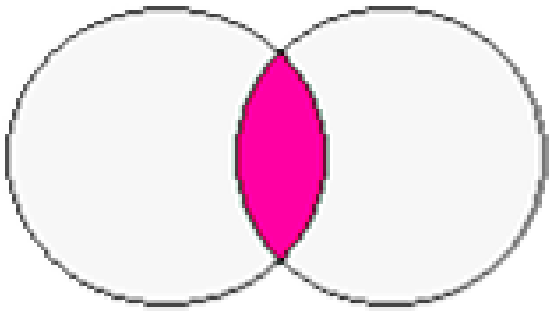
Boolean Operators: Caution

WHEN IN DOUBT

USE **“AND”**



"AND" is the default operator used in PUBMED



Boolean Operators Hints

- Think about other terms which mean the same i.e. synonyms, or related terms. Use **"OR"**
- Remember alternative spellings e.g. US vs British. Use **"OR"**
- **For different key words, use "AND"**

	AND	AND	
	Paediatric*	Treatment	Developing world
OR	Pediatric*	Therapy	3rd World countries
	Children		

OR

Advanced Searching Techniques -Tips

Truncation and missing characters, Wild Cards:

* or $ is inserted to find all alternative endings of a word

neoplas* → neoplasm OR neoplastic OR neoplasia

staph$ will search for information on staphylococcus OR staphylococcal OR staphylococci

- **?** can be used to substitute for a single letter anywhere in a word for alternatives
  - wom?n would search for "woman" and "women"

Advanced Searching Techniques -Tips

- "/" — means all subheadings are searched
  - When a search term is entered, you can selectively choose some subheadings (such as pharmacology for pharmacology studies).
  - Subheadings are generally imprecise; accepting all subheadings increases the yield.
- "adj" — cuts down on miscellaneous citations
  - "Heart adj failure" would find only instances in which "heart" is next to "failure."
- ".ti" or ".ab" — searches in the title or abstract for the word of interest
  - Can find citations where the word you search for is not a keyword
- ".mp" or multiple posting — a text word search; does not need to be a key word

DRAW BACK 3: Uncensored information

Consider the follow to select websites or information

- Branded VS Unbranded site
- Individual VS Organization or institution
- Dated VS Undated
- Daily updated VS Redundant or once yearly
- Referenced VS Unreferenced information
- Primary source VS "Secondary" or "Tertiary source"
- Provision of links to related sites VS No links, No contact info

DRAW BACK 4: Web based questionnaire

- Posers –sex posers, impostors, liars, multiple enteries difficult to manage
- Debriefing before collecting information difficult to manage
- Drop out rates- high , and you wont even know why
- Virus- major problem- may not affect your data directly but may disrupt the server➔ ANTIVIRUS

DRAW BACK 5: Plagiarism – SO EASY

- **In part** – cut and past and tie together- that's all
- **In totality-** get in another language- translate- put your signature – paper is ready
- **Solution** - Anti plagiarism software

Summary: you cannot fully achieve your potential as a researcher with out the net

Sky is the limit

- More than 5000 journals
- Thousands of book
- Millions of sites
- Unlimited resources
- More than 70 countries
- Generate own library

All In a few clicks !!!

This is just the hors d'oeuvre.

The main course is on its way

Thanks for your attention.

To ask questions, join the forum at www.oluwadiya.com